

MANCHESTER WATER DEPARTMENT (WSID #5022)

WATER QUALITY CONFIDENCE REPORT

APRIL 2023

Our goal is to provide a safe and dependable supply of drinking water.

Federal EPA regulations require that water departments throughout the country issue an annual Consumer Confidence Report to all water system customers. This report is designed to satisfy that requirement and to inform our customers about water quality, supply and service. This report is a snapshot of the quality of water that the Town of Manchester provided for January 1 through December 31, 2022. It also includes the date and results of any contaminants that were detected within the past five years, along with the date of detection and concentration.

Manchester Water Department Officials and Public Participation Opportunities

Questions about this report or the Water Department may be directed to any of the local officials listed below. Manchester Water Department values an informed customer base and encourages water users to attend Board of Water Commissioners meetings.

Board of Water Commissioners:

Ivan Beattie - Chair
Doug Kilburn
Tim Madden

Owner

Town of Manchester
40 Jeff Williams Way
Manchester Ctr. VT 05255

Owner / Official

Scott Murphy
Town Manager
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s.murphy@manchester-vt.gov

Operator / Technical & Service Assistant

Eric Severance
Water / Sewer Superintendent
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Billing & Collection

Kathleen Yanez
Finance Assistant
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Water Source Information

The Source of your drinking water is:

Source Name: **Batten Kill Well I (Primary)**
Vermont Source Type: **Gravel Screened Well**
EPA Source Type: **Groundwater**

Source Name: **Batten Kill Well II (Secondary)**
Vermont Source Type: **Gravel Screened Well**
EPA Source Type: **Groundwater**

Protecting Manchester's Drinking Water

On December 8, 1995 the Vermont Water Supply Division approved the Water Department's Source Protection Plan (SPP). The SPP delineates the sensitive Well Head Protection Area around the Batten Kill wells, and outlines strategies to ensure that the aquifer remains free of contamination. Obviously, this recharge area is of vital importance, and the Water Department encourages every citizen in the community to do their part to keep Manchester's water as clean and pure as possible. The SPP may be reviewed and/or copied at the Town Manager's Office. To protect Manchester's valuable drinking water supply, it is imperative that **none of the following hazardous wastes are ever discarded by flushing them down the drain, into a septic system or by dumping them on the ground.**

Acids	Hair Removers	Spot Removers
Adhesives	Herbicides	Turpentine
Aerosols	Inks	Varnish
Antifreeze	Insecticides	Weed Killers
Automobile	Insect Repellants	Wood Polishes
Batteries	Lacquers	Wood
Boric Acid	Lubricants	Preservatives
Brake Fluid	Motor Oil	Wood Stains
Charcoal Lighter	Muriatic Acid	
Fluid	Nail Polish	
Cleaning Fluid	Nail Polish	
Degreasers	Removers	
Dioxin	Oven Cleaners	
Disinfectants	Paints	
Dry Gas	Paint Removers	
Dyes	Pentachlorophenol	
Pesticides	Permanent	
Epoxies	Solutions	
Furniture	Photo Chemicals	
Strippers	Rat Poison	
Gasoline / Diesel	Rust Solvents	
Fuel	Solvents	

SOURCES OF DRINKING WATER AND CONTAMINANTS

The sources of drinking water (both tap water and bottled water) include surface water (streams, lakes) and ground water (wells, springs). As water travels over the land's surface or through the ground, it dissolves naturally-occurring minerals. It also picks up substances resulting from the presence of animals and human activity. Some "contaminants" may be harmful. Others, such as iron and sulfur, are not harmful. Public water systems treat water to remove contaminants, if any are present. In order to ensure that your water is safe to drink, we test it regularly according to regulations established by the U.S. Environmental Protection Agency and the State of Vermont. These regulations limit the amount of various contaminants:

- **Microbial Contaminants** (viruses and bacteria) may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Inorganic Contaminants** (salts and metals) can be naturally-occurring or result from the urban stormwater runoff, industrial or domestic wastewater discharges, oil/gas production, mining or farming.
- **Pesticides and Herbicides** may come from agriculture, stormwater runoff, residential uses, and careless disposal of household chemicals.
- **Organic Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also come from gas stations, urban stormwater runoff and septic systems.
- **Radioactive Contaminants**, which can be naturally occurring or the result of mining activity.

WATER QUALITY DATA

The tables below list all the drinking water contaminants detected during the 2022 calendar year, and the date and results of any contaminants detected within the past five years. The presence of these contaminants does not necessarily mean that the water poses a health risk.

Terms and abbreviations - To help you better understand these terms, we have provided the following definitions:

- **Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Level 1 Assessment:** A Level 1 Assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- **Level 2 Assessment:** A Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
- **Locational Running Annual Average (LRAA):** The average of sample analytical results for samples taken at a particular monitoring location during four consecutive calendar quarters.
- **Maximum Contamination Level (MCL):** The "Maximum Allowed" MCL is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **Maximum Contamination Level Goal (MCLG):** The "Goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. Addition of a disinfectant may help control microbial contaminants.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of disinfectants in controlling microbial contaminants.
- **Nephelometric Turbidity Units (NTU):** NTU is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **Parts per billion (ppb) or Micrograms per liter (µg/l):** (one penny in ten million dollars).
- **Parts per million (ppm) or Milligrams per liter (mg/l):** (one penny in ten thousand dollars).
- **Parts per trillion (ppt) or Nanograms per liter (ng/l):** (one penny in ten billion dollars).
- **Per- and polyfluoroalkyl substances (PFAS):** a group of over 4,000 human-made chemicals (not naturally occurring) that have been used in industry and consumer products worldwide. Refer to last page for additional information.
- **Picocuries per liter (pCi/L):** A measure of radioactivity in water.
- **Running Annual Average (RAA):** The average of 4 consecutive quarters (when on quarterly monitoring); values in the table represent the highest RAA for the year.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- **90th Percentile:** Ninety percent of the samples are below the action level. (Nine of ten sites sampled were at or below this level.)

LEVEL OF DETECTED CONTAMINANTS

Contaminant Detected	Level Detected (Units)	MCL	MCLG	Sample Date	Violation Yes or No	Typical Source
Barium	0.022 ppm	2	2	9/19/22	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Gross Alpha	1.22 pCi/L	15	N	5/12/15	No	Erosion of natural deposits
Iron	0.044 ppm	NA	N	9/19/22	No	Erosion of natural deposits
Nitrate	0.78 ppm	10	10	3/7/22	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Radium 226	0.348 pCi/L	5	0	7/18/17	No	Erosion of natural deposits
Radium 228	0.288 pCi/L	5	0	7/18/17	No	Erosion of natural deposits
Combined Radium (226 & 228)	0.628 pCi/L	5	0	7/18/17	No	Erosion of natural deposits
Total Trihalomethanes	9 ppb	80	N/A	2022	No	By-product of drinking water disinfection

LEAD AND COPPER ACTION LEVELS

Contaminant Detected	Range	90th Percentile	Sample Date	Action Level*	# of Sites Exceeding the Action Level	Total # of Sites Sampled	Typical Source
Copper	0 – 0.15 Ppm	0.12	2020	1.3 ppm	0	20	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	0-31.7 ppb	2.8	2020	15 ppb	1	20	Corrosion of household plumbing systems; erosion of natural deposits

*The lead and copper action level exceedance is based on the 90th percentile concentration, not the highest detected result.

DISINFECTION RESIDUAL

Disinfection Residual	RAA	Range	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.286	0.050 – 0.500	mg/L	4.0	4.0	Water additive to control microbes

VIOLATION(S) THAT OCCURRED DURING THE YEAR

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. The below table lists any drinking water violations we incurred during 2022. A failure to perform required monitoring means we cannot be sure of the quality of our water during that time.

Type	Category	Analyte	Compliance Period
None			

PUBLIC NOTICE – PERMIT TO OPERATE ISSUED MAY 23, 2013

The Water System is required to notify all users of the following compliance schedule contained in the Permit to Operate issued by the State of Vermont Agency of Natural Resources:

On or before October 1, 2013 and no later than October 1 of each subsequent year, the Permittee shall provide the Secretary (attention: Tim Raymond, Operations and Engineering Section Chief) with an Annual Report updating the Water System's long range improvements plan and implementation schedule (LRP) and address the Water System's capability to meet the proposed infrastructure improvement dates.

HEALTH INFORMATION REGARDING DRINKING WATER

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly individuals and infants, can be particularly at risk of infections. These people should seek advice from their healthcare providers about drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791).

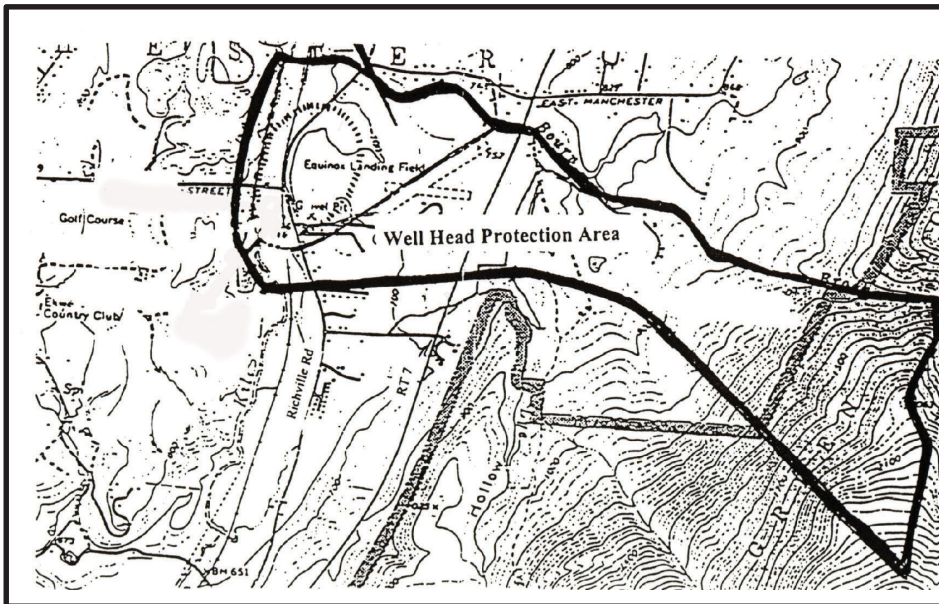
Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Manchester Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

SOURCES OF DRINKING WATER AND CONTAMINANTS

Vermonters are fortunate to live in a state where water is relatively plentiful and clean. As Vermont's population grows, however, water conservation will play an increasingly important role in protecting the health of our state's lakes and streams and the safety of our drinking water supplies. Using water more efficiently will protect and conserve drinking water supplies and save energy.

We can help safeguard our own health and the health of our neighbors by using less water. Water conservation can improve septic system performance, reduce the risk of groundwater contamination and limit the potential for septic system repair or replacement. If you use the municipal sewer system, water conservation can result in less chemicals for treatment and discharge of treated sewage. Water conservation also provides energy conservation savings as less electricity is needed to heat, pump, and treat water.



Customers are encouraged to research information at:
www.epa.gov/watersense

PFAS Frequently Asked Questions

Per- and Polyfluoroalkyl Substances (PFAS) are contaminants you may see in your Consumer Confidence Report for the first time.

What are PFAS? PFAS are a group of over 4,000 human-made chemicals (they do not occur naturally) that have been used in industry and consumer products worldwide since at least the 1950s. These chemicals are used to make household and commercial products that resist heat and chemical reactions and repel oil, stains, grease, and water. Some common products that may contain PFAS include non-stick cookware, water-resistant clothing and materials, cleaning products, cosmetics, food packaging materials, and some personal care products. Due to their resilient chemical nature, they don't readily degrade once they are released into the environment. In addition, the common use of these chemicals in industry and consumer products has led to their widespread impact on the environment. The impact of these chemicals on your drinking water continues to be studied.

Why are PFAS being tested in my drinking water? In May 2019, Act 21 (S.49), an act relating to the regulation of per- and polyfluoroalkyl substances (PFAS) in drinking and surface waters, was signed by Governor Scott. This Act provides a comprehensive framework to identify PFAS contamination and to issue new rules to regulate PFAS levels in drinking water.

What if PFAS have been detected in my drinking water? Act 21 set an interim standard for the detected concentration of five PFAS in drinking water, or the combined concentration of any of the 5 PFAS, which should not exceed **20 parts per trillion (ppt)**. The interim standard is based on the Health Advisory established by the Vermont Department of Health. The five PFAS are:

(PFNA): Perfluorononanoic Acid	(PFOA): Perfluorooctanoic Acid	(PFOS): Perfluorooctane Sulfonic Acid
(PFHpA): Perfluoroheptanoic Acid	(PFHxS): Perfluorohexane Sulfonic Acid	

If your water has been tested and the **sum any of the five PFAS listed above is confirmed to exceed 20 ppt**, a Do Not Drink notice will be issued informing you not to use your water for drinking or cooking, brushing teeth, making ice cubes, making baby formula, washing fruits and vegetables or any other consumptive use. You will be advised to use another source of water for consumption which may include bottled water.

An additional 13 PFAS were required to be tested for, per Act 21. These additional 13 PFAS, listed below, currently do not have an established health-based standard and are not counted toward the combined standard of 20 ppt:

(11Cl-PF3OUdS): 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic Acid	(PFBS): Perfluorobutane Sulfonic Acid
(9Cl-PF3ONS): 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic Acid	(PFDA): Perfluorodecanoic Acid
(DONA): 4,8-Dioxa-3H-perfluorononanoic Acid	(PFDoA): Perfluorododecanoic Acid
(HFPO-DA): Hexafluoropropylene Oxide Dimer Acid	(PFHxA): Perfluorohexanoic Acid
(NEtFOSAA): N-ethyl perfluorooctanesulfonamidoacetic Acid	(PFTA): Perfluorotetradecanoic Acid
(NMeFOSAA): N-methyl perfluorooctanesulfonamidoacetic Acid	(PFTDA): Perfluorotridecanoic Acid
	(PFUnA): Perfluoroundecanoic Acid

Where can I learn more about PFAS in drinking water?

For information about the health effects of PFAS, please visit www.healthvermont.gov/water/pfas or call the Vermont Department of Health at 1-800-439-8550. If you have specific health concerns, contact your health care provider.